

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Patent Application of:  
Kazuhito Kojima et al.

Application No.: 10/606,184

Confirmation No.: 1598

Filed: June 26, 2003

Art Unit: 2166

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For: DATABASE SYSTEM AND A METHOD OF  
DATA RETRIEVAL FROM THE SYSTEM

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Examiner: S. F. Lin

**APPEAL BRIEF**

**MS Appeal Brief** - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

As required under § 41.37(a), this brief is filed more than two months after the Notice of Appeal filed in this case on March 7, 2007, and is in furtherance of said Notice of Appeal.

The fees required under § 41.20(b)(2), and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1205.2:

- |      |   |
|------|---|
| I.   | Real Party In Interest                        |
| II.  | Related Appeals and Interferences             |
| III. | Status of Claims                              |
| IV.  | Status of Amendments                          |
| V.   | Summary of Claimed Subject Matter             |
| VI.  | Grounds of Rejection to be Reviewed on Appeal |
| VII. | Argument                                      |

VIII.	Claims
Appendix A	Claims
Appendix B	Evidence
Appendix C	Related Proceedings

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is:

NS Solutions Corporation

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 6 claims pending in application.

B. Current Status of Claims

1. Claims canceled: 2-6
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: 1 and 7-11
4. Claims allowed: None
5. Claims rejected: 1 and 7-11

C. Claims On Appeal

The claims on appeal are claims 1 and 7-11.

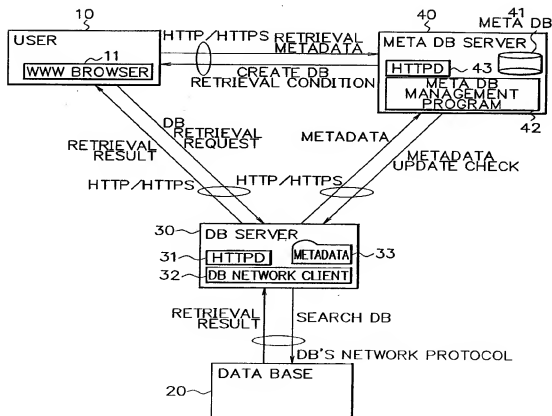
IV. STATUS OF AMENDMENTS

Applicant did not file an Amendment After Final Rejection.

## V. SUMMARY OF CLAIMED SUBJECT MATTER

Kojima et al. discloses a method of data retrieval using metadata, pertaining to real data stored in at least one database (DB), that is collected and managed in a single meta DB server, wherein the metadata that match a retrieval request are extracted by searching of the meta DB server and bypassing the server of the at least one database.<sup>1</sup> In particular, as shown in FIG. 2 below, Kojima et al. discloses a user terminal 10 that inputs a keyword for search, issues a retrieval request, displays a retrieval result; a database (DB) 20 which stores actual data; a DB server 30 further comprising a retrieval request receiving module 31, a retrieval executing module 32; and a DB network client 32; and a meta DB server 40.<sup>2</sup>

FIG. 2

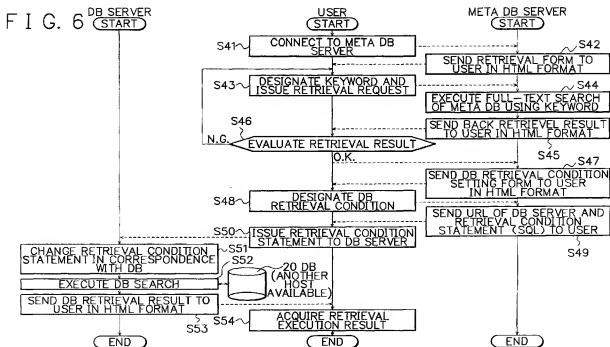


<sup>1</sup> U.S. Patent Publication No. US 2004/0010493 at **ABSTRACT** and claims.

<sup>2</sup> *Id.* at FIG. 2, paragraphs [0069] to [0073].

Further, as shown in **FIG. 6** below, Kojima et al. discloses a method of data retrieval comprising a series of search processes in correspondence with the user terminal **10**, DB server **30**, and meta DB server **40**. In particular, Kojima et al. discloses the user connects the user terminal **10** to the meta DB server **40** via the network **S41**; the meta DB server **40** sends a search form of the meta DB **41** to the user terminal **10** **S42**; user designates a keyword using the above-mentioned search form, and issues a retrieval request to the meta DB server **40** **S43**; the meta DB server **40** executes a full-text search of the meta DB **41** **S44**, and sends back the retrieval result to the user terminal **10** **S45**; the user evaluates the retrieval result, and if the result is satisfactory, sends a message to the meta DB server **40** **S46**.

Furthermore, Kojima et al. discloses the meta DB server **40** forms a retrieval condition creation form for the DB **20** in the HTML format using the retrieval result of the meta DB 41 and metadata, and sends it to the user terminal **10** **S47**; the user designates the retrieval condition of



the DB **20** using the presented retrieval condition creation form, and sends it to the meta DB server **40** in **S48**; the meta DB server **40** sends the received retrieval condition text (SQL) and the URL of the DB server **30** corresponding to the DB **20** as the destination of the text to the user terminal **10** **S49**.

Moreover, Kojima et al. discloses the user terminal **10** issues a retrieval condition statement (SQL) to the DB server **30** indicated by the received URL as a retrieval request **S50**; the DB server **30** translates the retrieval request into the format concordant with the DB **20** in **S51**; the DB server **30** issues a retrieval request (SQL) to the DB **20** to retrieve real data **S52**; transmits the obtained retrieval result to the user terminal **10** in step **S53**; and the user terminal **10** acquires the retrieval execution result in step **S54**.

Thus, with support of the above disclosure, Kojima et al. claims, as recited in independent claim 1 and similarly in independent claim 9:

[A] method of data retrieval by a user from a distributed database, comprising:

*saving metadata* pertaining to real data stored in databases distributed on a network in first servers distributed on the network associated with each of said databases;

*collecting metadata* saved in said first servers and storing said metadata in a metadata database of a second server without storing the real data represented by said metadata;

*extracting metadata* that matches a user retrieval request from a user terminal by searching metadata stored in said metadata database, and transmitting a retrieval result including information of a location of the first server *saving the metadata that matches said user retrieval request*, to said user terminal;

inputting a real data retrieval condition for the database on the basis of the retrieval result of the metadata database transmitted to said user terminal;

issuing a real data retrieval condition from said user terminal to the first server on the basis of said information of a location of the first server,

*wherein said real data retrieval condition is issued to said first server by bypassing said second server; and*

*retrieving, by the first server, the real data from the corresponding database after converting said real data retrieval*

*condition into a format which is concordant with the database*  
(emphasis added).

#### VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

**Claims 1 and 7-11 are rejected under 35 U.S.C. Section 103(a) as being unpatentable over U.S. Patent No. 5,920,856 (Syeda-Mahmood) in view of U.S. Patent No. 5,913,208 (Brown et al.) and U.S. Patent No. 6,038,610 (Belfiore et al.).**

#### VII. ARGUMENTS

- A. **Syeda-Mahmood is deficient in that it does not disclose the limitations of the claimed invention indicated in the outstanding Office Action.**
- B. **Syeda-Mahmood teaches away from the claimed invention.**
- C. **Neither Belfiore et al. nor Brown et al. can overcome all of the deficiencies of Syeda-Mahmood.**

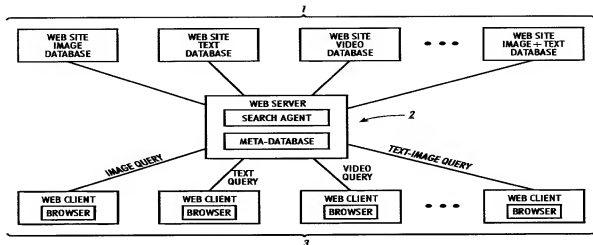
**Argument A: Syeda-Mahmood is deficient in that it does not disclose the limitations of the claimed invention indicated in the outstanding Office Action.**

Syeda-Mahmood discloses a system for selecting multimedia databases over networks that includes a network server that interfaces a client with selected database sites from a plurality of databases.<sup>3</sup> In particular, as shown in **FIG. 1**, below, Syeda-Mahmood discloses the three main components are multimedia database systems at web sites 1, a web server 2 consisting of a search agent and a meta-database, and a set of web applications at web clients/browsers 3.<sup>4</sup> Each

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<sup>3</sup> Syeda-Mahmood at ABSTRACT.

<sup>4</sup> Syeda-Mahmood at **FIG. 1**.

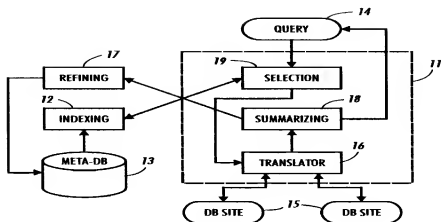
**FIG. 1**

multimedia database system manages the insertion, deletion, and update of the media data stored in the local databases and the meta-database records information needed for database sites selection.

In addition, as shown in **FIG. 3** below, Syeda-Mahmood discloses starting from the user query 14, a query type category is derived to index the first level of the meta-database and the mapping of each user query to query category may be determined by a set of rules.<sup>5</sup> Further, Syeda-Mahmood discloses if the initial site selection does not offer a sufficient pruning of the database sites, the search agent 11 can further prune these sites based on user feedback before distributing to relevant database sites 15 and that, after the target database sites 15 are selected with selection 19, the user query may have to be transformed by a translator module 16 into forms the respective databases expect.<sup>6</sup>

<sup>5</sup> *Id.* at **FIG. 3**; and column 6, lines 52-55.

<sup>6</sup> *Id.* at **FIG. 3**; and column 7, lines 4-17.

**FIG. 3**

Furthermore, Syeda-Mahmood discloses, the answers returned from the databases 15 will be assimilated before relaying back to the user; the assimilation includes a refining module 17 and a summarizing module 18; the refining module 17 updates the site relevancy of query-data patterns stored in the meta-database 13 based on the database responses to the posed query 14; and a set of generic rules may be constructed to conduct the refinement of the site relevancy of query-data patterns extracted from web database sites.<sup>7</sup>

Moreover, Syeda-Mahmood discloses the summarizing module 18 will check the consistency among the retrieved information, to eliminate any duplicate information, and then to forward the summarized information to the origin of the query 14.<sup>8</sup> In addition, Syeda-Mahmood discloses web database sites are considered as independent data resources, it is therefore likely that different web sites contain duplicate information. Further, Syeda-Mahmood discloses the summarizing module 18 will detect such multiple occurrences and take them into account by summarize such data into a format easily assimilated by a user.<sup>9</sup> Furthermore, Syeda-Mahmood discloses knowledge on duplicated resources are also gradually accumulated by

<sup>7</sup> *Id.* at FIG. 3; and column 7, lines 17- 34.

<sup>8</sup> *Id.* at FIG. 3; and column 7, lines 47-49.

<sup>9</sup> *Id.* at FIG. 3; and column 7, lines 49-54.



the module and this information will be fed back to the refining 17, indexing 12 and selection 19 modules for future efficient query processing.<sup>10</sup>

However, Syeda-Mahmood nowhere discloses, as independent claim 1 recites and similarly recited in independent claim 9:

[A] method of data retrieval by a user from a distributed database, comprising:  
    *saving metadata* pertaining to real data stored in databases distributed on a network in first servers distributed on the network associated with each of said databases;  
    *collecting metadata* saved in said first servers and storing said metadata in a metadata database of a second server without storing the real data represented by said metadata;  
    *extracting metadata* that matches a user retrieval request from a user terminal by searching metadata stored in said metadata database, and transmitting a retrieval result including information of a location of the first server *saving the metadata that matches said user retrieval request*, to said user terminal;  
    inputting a real data retrieval condition for the database on the basis of the retrieval result of the metadata database transmitted to said user terminal;  
    issuing a real data retrieval condition from said user terminal to the first server on the basis of said information of a location of the first server,  
    *wherein said real data retrieval condition is issued to said first server by bypassing said second server; and*  
    *retrieving, by the first server, the real data from the corresponding database after converting said real data retrieval condition into a format which is concordant with the database* (emphasis added).

That is, since the metadata contains the location of at least the database or first server, and information that represents the contents of real data in the database, *the user can detect the location of the database* which stores real data that matches the retrieval request, or the first server that manages the database *simultaneously with retrieval of the metadata* (emphasis added). Consequently, *the user need only know the location of the second server, and need not*

<sup>10</sup> *Id.* at FIG. 3; and column 7, lines 54-58.

*be aware of the locations of the distributed databases and first servers for managing these databases.*<sup>11</sup>

Further, since metadata that pertain to real data may be stored in one or more databases and is collected and managed by a second server, and metadata that match a retrieval condition are extracted by search of the second server, even when a plurality of databases and first servers that manage these databases are present, *all metadata that match the retrieval request can be extracted by search of the second server.* Thus, in the claimed invention, *the user can obtain information of different databases from the single second server without requiring immediate connectivity to the distributed databases (i.e., through the first servers).* That is, the user need not make any cumbersome operations for detecting and accessing all the distributed first servers one-by-one, and can easily find a database that stores desired real data.<sup>12</sup>

Further, Syeda-Mahmood discloses: “using this approach, the Web server will assemble the meta-database as follows. Given a set of databases at web sites, an initial meta-database is constructed from structured query templates returned by the individual databases.”<sup>13</sup> That is, Syeda-Mahmood disclose no description that indicates the websites 1 provides metadata to the web server 2, and what is disclosed by Syeda-Mahmood is simply that the web server 2 produces meta-database based on query templates provided by the web sites 1. Thus, Syeda-Mahmood does not disclose, as claim 1 and similarly claim 9 recites:

*saving metadata* pertaining to real data stored in databases distributed on a network in first servers distributed on the network associated with each of said databases;

*collecting metadata* saved in said first servers and storing said metadata in a metadata database of a second server without storing the real data represented by said metadata (emphasis added).

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<sup>11</sup> U.S. Patent Publication No. US 2004/0010493 at paragraph [0039].

<sup>12</sup> U.S. Patent Publication No. US 2004/0010493 at paragraph [0161].

<sup>13</sup> See Syeda-Mahmood at column 6, lines 10-13.

Further, Syeda-Mahmood does not disclose that metadata are kept by the web sites 1 and give no description on that metadata are collected from the web sites 1 that the metadata be kept by the web sites 1.<sup>14</sup> Moreover, Syeda-Mahmood discloses: "[T]his information is generated by an attentional or refining module." That is, Syeda-Mahmood explicitly describes that metadata are not collected from the web sites 1, but are produced by the web server 2. Thus, in contrast to what is recited by claim 1 and similarly by claim 9: recites:

*saving metadata* pertaining to real data stored in databases distributed on a network in first servers distributed on the network associated with each of said databases;

*collecting metadata* saved in said first servers and storing said metadata in a metadata database of a second server without storing the real data represented by said metadata (emphasis added).

Syeda-Mahmood does not disclose that metadata pertaining to real data stored in the first servers (database servers) are collected by the second server, and are stored in the metadata database of the second server.

Moreover, Syeda-Mahmood does not disclose as claim 1 and similarly claim 9 recites:

*wherein said real data retrieval condition is issued to said first server by bypassing said second server; and*

*retrieving, by the first server, the real data from the corresponding database after converting said real data retrieval condition into a format which is concordant with the database (emphasis added).*

Therefore, it is respectfully submitted that Syeda-Mahmood Syeda-Mahmood is deficient in that it does not disclose the limitations of the claimed invention indicated in the outstanding Office Action.

**Argument B: Syeda-Mahmood teaches away from the claimed invention.**

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<sup>14</sup> Id. at column 4, lines 6-9, and *ibid.*, lines 17-21.

As discussed and shown in **FIG.1** above, Syeda-Mahmood discloses the web server **2** intermediates between the databases **1** and the client **3**. That is, as can clearly be seen from **FIG. 1**, since the client **3** does *not directly send the real data retrieval* request to the databases **1**, the information is always processed by the web server **2**. Thus, in contrast to the claimed invention which recites the limitation:

*wherein said real data retrieval condition is issued to said first server by bypassing said second server; and*  
retrieving, by the first server, the real data from the corresponding database after converting said real data retrieval condition into a format which is concordant with the database (emphasis added).

Syeda-Mahmood nowhere discloses that the real data retrieval request is directly sent from the client **3** to the databases **1**. That is, Syeda-Mahmood discloses the web server **2** takes part in all processes executed between the client **3** and the web sites **1**, including retrieval of metadata, and retrieval/processing of real data in the individual databases in the web sites **1**. Thus, the above-discussed mode of operation of Syeda-Mahmood is in direct contrast to the claimed invention and undesirably increases the load on the web server **2**. Therefore, it is respectfully submitted Syeda-Mahmood not only does not disclose the claimed invention but in fact teaches away from the functional structure of the claimed invention.

**Argument C: Neither Belfiore et al. nor Brown et al. can overcome all of the deficiencies of Syeda-Mahmood.**

The outstanding Office Action acknowledges deficiencies in Syeda-Mahmood and attempts to overcome these deficiencies by combining Brown et al. and Belfiore et al. with Syeda-Mahmood. However, neither Brown et al. and Belfiore et al. can overcome all of the deficiencies of Syeda-Mahmood, as discussed below.

Brown et al. discloses identifying duplicate documents from search results without comparing document content.<sup>15</sup> In particular, Brown et al. discloses to find a particular

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<sup>15</sup> Brown et al. at ABSTRACT.

document, a query is submitted for processing to a search engine **120** running on a computer in a computing environment and the search engine makes use of an index **130** to identify documents that are relevant to the query.<sup>16</sup> Further, Brown et al. discloses a document collection **141** may comprise documents located anywhere in the computing environment (e.g., spread across two or more computer memories) and that the relevant documents are returned by the search engine in the form of a hit-list.<sup>17</sup>

In addition, Brown et al. discloses since multiple instances of the same document may exist in the computing environment, an entry for each duplicate instance of the same document may appear in a hit-list and that a formatter **110** is used to identify hit-list entries for duplicate instances of the same document and make any of a number possible modifications to the hit-list to distinguish these duplicates.<sup>18</sup> Further, Brown et al. discloses documents **140** and/or indexes **130** on one computer may be accessed over the network by another computer using a Web protocol, a networked file system protocol (e.g., NFS, AFS), or some other protocol.<sup>19</sup> Moreover, Brown et al. discloses services on one computer (e.g., search engine **120**, formatter **110**) may be invoked over the network by another computer using the Web protocol, a remote procedure call (RPC) protocol, or some other protocol.<sup>20</sup>

Belfiore et al. discloses storage of sitemaps to hold content-related information about hypertext documents stored at a server site.<sup>21</sup> In particular, Belfiore et al. discloses the steps that are performed for a web crawler to use sitemap files includes a swift crawler visiting the site that has a sitemap file; the web crawler locating the sitemap file at a default location or at a location specified within the fields of the object tag; the web crawler extracting the contents from the sitemap file and using the information to build a hierarchical index to the site.<sup>22</sup>

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<sup>16</sup> *Id.* at FIG 2 and FIG. 3A; and column 4, lines 59 - 63.

<sup>17</sup> *Id.* at FIG 2 and FIG. 3A; and column 4, line 63 -66.

<sup>18</sup> *Id.* at FIG 3A and FIG. 3B; and column 4, line 66 to column 5, line 5.

<sup>19</sup> *Id.* at FIG 3A and FIG. 3B; and column 5, line 6 - 12.

<sup>20</sup> *Id.* at FIG 3A and FIG. 3B; and column 5, line 16 - 22.

<sup>21</sup> Belfiore et al. at ABSTRACT.

<sup>22</sup> *Id.* at FIG. 12; and column 12, lines 57-67.

However, neither Brown et al. and Belfiore et al. disclose, as independent claim 1 recites and as similarly recited in independent claim 9:

[A] method of data retrieval by a user from a distributed database, comprising:

*saving metadata* pertaining to real data stored in databases distributed on a network in first servers distributed on the network associated with each of said databases;

*collecting metadata* saved in said first servers and storing said metadata in a metadata database of a second server without storing the real data represented by said metadata;

*extracting metadata* that matches a user retrieval request from a user terminal by searching metadata stored in said metadata database, and transmitting a retrieval result including information of a location of the first server *saving the metadata that matches said user retrieval request*, to said user terminal;

inputting a real data retrieval condition for the database on the basis of the retrieval result of the metadata database transmitted to said user terminal;

issuing a real data retrieval condition from said user terminal to the first server on the basis of said information of a location of the first server,

*wherein said real data retrieval condition is issued to said first server by bypassing said second server; and*

*retrieving, by the first server, the real data from the corresponding database after converting said real data retrieval condition into a format which is concordant with the database (emphasis added).*

Further, neither Brown et al. and Belfiore et al. disclose that metadata are kept by the web sites 1 and give no description on that metadata are collected from the web sites 1 that the metadata be kept by the web sites 1.<sup>23</sup> Moreover, Syeda-Mahmood discloses: "[T]his information is generated by an attentional or refining module." That is, Syeda-Mahmood explicitly describes that metadata are not collected from the web sites 1, but are produced by the web server 2. Thus, in contrast to what is recited by claim 1 and similarly by claim 9: recites:

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<sup>23</sup> Id. at column 4, lines 6-9, and *ibid.*, lines 17-21.

*saving metadata* pertaining to real data stored in databases distributed on a network in first servers distributed on the network associated with each of said databases;

*collecting metadata* saved in said first servers and storing said metadata in a metadata database of a second server without storing the real data represented by said metadata (emphasis added).

neither Brown et al. and Belfiore et al. disclose that metadata pertaining to real data stored in the first servers (database servers) are collected by the second server, and are stored in the metadata database of the second server.

Moreover, neither Brown et al. and Belfiore et al. disclose as claim 1 and similarly claim 9 recites:

*wherein said real data retrieval condition is issued to said first server by bypassing said second server; and*  
retrieving, by the first server, the real data from the corresponding database after converting said real data retrieval condition into a format which is concordant with the database (emphasis added).

Therefore, either Belfiore et al. nor Brown et al. can overcome all of the deficiencies of Syeda-Mahmood.

In consideration of the arguments of sections A, B and C above, it is respectfully submitted, that none of Syeda-Mahmood, Belfiore et al. nor Brown et al., whether taken alone or in combination, disclose, suggest or make obvious the claimed invention. In particular, none of the above cited references disclose that the real data retrieval request is sent to the second server bypassing a first server.

VIII. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A include the amendments filed by Applicant.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 21776-00033-US1 from which the undersigned is authorized to draw.

Dated: October 9, 2007

Respectfully submitted,

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**APPENDIX A**

**Claims Involved in the Appeal of Application Serial No. 10/606,184**

1. A method of data retrieval by a user from a distributed database, comprising:

saving metadata pertaining to real data stored in databases distributed on a network in first servers distributed on the network associated with each of said databases;

collecting metadata saved in said first servers and storing said metadata in a metadata database of a second server without storing the real data represented by said metadata;

extracting metadata that matches a user retrieval request from a user terminal by searching metadata stored in said metadata database, and transmitting a retrieval result including information of a location of the first server saving the metadata that matches said user retrieval request, to said user terminal;

inputting a real data retrieval condition for the database on the basis of the retrieval result of the metadata database transmitted to said user terminal;

issuing a real data retrieval condition from said user terminal to the first server on the basis of said information of a location of the first server,

wherein said real data retrieval condition is issued to said first server by bypassing said second server; and

retrieving, by the first server, the real data from the corresponding database after converting said real data retrieval condition into a format which is concordant with the database.

Claims 2-6: (Canceled).

7. The method of claim 1, wherein, when the metadata which is saved in the first servers and pertaining to the real data has been updated, said metadata is stored in said metadata database of said second server without storing the real data pertaining to said metadata.

8. The method of claim 1, wherein the metadata which is saved in the first server and pertaining to the real data is stored in said metadata database of said second server without storing the real data pertaining to said metadata at a predetermined time interval.

9. A computer-readable medium comprising computer-executable instructions contained therein which, when executed, carry out the functions of:

saving metadata pertaining to real data stored in databases distributed on a network in first servers distributed on the network associated with each of said databases;

collecting metadata saved in said first servers and storing said metadata in a metadata database of a second server without storing the real data represented by said metadata;

extracting metadata that matches a user retrieval request from a user terminal by searching metadata stored in said metadata database, and transmitting a retrieval result including information of a location of the first server saving the metadata that matches said user retrieval request, to said user terminal;

inputting a real data retrieval condition for the database on the basis of the retrieval result of the metadata database transmitted to said user terminal;

issuing a real data retrieval condition from said user terminal to the first server on the basis of said information of a location of the first server,

wherein said real data retrieval condition is issued to said first server by bypassing said second server; and

retrieving, by the first server, the real data from the corresponding database after converting said real data retrieval condition into a format which is concordant with the database

10. The computer-readable medium of claim 9, wherein, when the metadata which is saved in the first servers and pertaining to the real data has been updated, said metadata is stored in said metadata database of said second server without storing the real data pertaining to said metadata.

11. The computer-readable medium of claim 9, wherein the metadata which is saved in the first server and pertaining to the real data is stored in said metadata database of said second server without storing the real data pertaining to said metadata at a predetermined time interval.

**APPENDIX B**

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the examiner is being submitted.

**APPENDIX C**

No related proceedings are referenced in II. above, hence copies of decisions in related proceedings are not provided.